

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* DEAN A. KLEIN

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Appeal 2007-0372  
Application 09/654,115  
Technology Center 2100

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Decided: May 24, 2007

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Before JOSEPH F. RUGGIERO, MAHSHID D. SAADAT, and JEAN R. HOMERE, *Administrative Patent Judges*.

RUGGIERO, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134 from the Final Rejection of claims 1-61. We have jurisdiction under 35 U.S.C. § 6(b).

Appellant's claimed invention relates to a method and system for determining and identifying, at the time of computer program compilation,

which information is to be cached during execution of the computer program (Specification 2).

We affirm.

Claim 1 is illustrative of the invention and it reads as follows:

1. A computer system having cache circuitry, the computer system adapted to be controlled by a computer program to cache information, comprising:

cache circuitry, including a cache memory adapted to store information related to a computer program;

a main memory adapted to store the information;

a processor adapted to be controlled by the computer program and adapted to cooperate with a bus interface unit to direct selected portions of the information to the cache circuitry based at least in part on cacheability determinations made during compilation of the computer program; and

bus circuitry, operatively connecting the processor, the cache circuitry, and the main memory.

The Examiner's Answer cites the following prior art references:

Holler	US 5,721,893	Feb. 24, 1998
Morrison	US 5,765,037	Jun. 9, 1998
Mattson, Jr.	US 6,115,809	Sep. 5, 2000
Prasanna	US 6,272,599 B1	Aug. 7, 2001
Lasserre	US 2002/0078268 A1	Jun. 20, 2002

Claims 25-27, 29, 32-36, 38-40, 46-50, 52-54, 60, and 61 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Mattson, Jr. Claims 1-24, 28, 30, 31, 37, 41-45, 51, and 55-59 stand rejected under 35 U.S.C. § 103(a). As evidence of obviousness, the Examiner offers Mattson, Jr. in view of Morrison with respect to claims 1-4, 6-8, 13-15, and 17-24, adds Prasanna to the basic combination with respect to claims 5, 12,

and 16, and adds Lasserre to the basic combination with respect to claims 9-11. Further, the Examiner offers, as evidence of obviousness, Mattson, Jr. in view of Prasanna with respect to claims 28, 37, 45, and 51, Mattson, Jr. in view of Lasserre with respect to claims 30, 31, 41-44, and 55-58, and Mattson, Jr. in view of Lasserre and Prasanna with respect to claim 59.

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the Briefs and Answer for the respective details.

## ISSUES

(i) Under 35 U.S.C § 102(e), does Mattson, Jr. have a disclosure which anticipates the invention set forth in claims 25-27, 29, 32-36, 38-40, 46-50, 52-54, 60, and 61?

(ii) Under 35 U.S.C § 103(a), with respect to appealed claims 1-24, 28, 30, 31, 37, 41-45, 51, and 55-59 has the Examiner established a prima facie case of obviousness based on Mattson, Jr. taken in separate combinations with the secondary references to Morrison, Prasanna, and Lasserre.

## PRINCIPLES OF LAW

### 1. ANTICIPATION

It is axiomatic that anticipation of a claim under § 102 can be found if the prior art reference discloses every element of the claim. *See In re King*, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986) and *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984).

In rejecting claims under 35 U.S.C. § 102, a single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation. *Perricone v. Medicis Pharmaceutical Corp.*, 432 F.3d 1368, 1375-76, 77 USPQ2d 1321, 1325-26 (Fed. Cir. 2005), citing *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565, 24 USPQ2d 1321, 1326 (Fed. Cir. 1992). Anticipation of a patent claim requires a finding that the claim at issue “reads on” a prior art reference. *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1346, 51 USPQ2d 1943, 1945 (Fed. Cir. 1999) (“In other words, if granting patent protection on the disputed claim would allow the patentee to exclude the public from practicing the prior art, then that claim is anticipated, regardless of whether it also covers subject matter not in the prior art.”) (internal citations omitted).

## 1. OBVIOUSNESS

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). “[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Furthermore, “‘there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness’ . . . [H]owever, the analysis need not seek out precise teachings

directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)).

### 35 U.S.C. § 102(a) REJECTION

With respect to the 35 U.S.C. § 102(e) rejection of independent claim 25 based on the teachings of Mattson, Jr., the Examiner indicates (Answer 4-5) how the various limitations are read on the disclosure of Mattson, Jr. In particular, the Examiner directs attention to the illustrations in Figures 3 and 4 of Mattson, Jr., as well as the disclosure at column 3, lines 46-51, column 4, line 59 to column 5, line 1, and column 5, lines 25-56 of Mattson, Jr.

In our view, the Examiner’s analysis is sufficiently reasonable that we find that the Examiner has at least satisfied the burden of presenting a prima facie case of anticipation. The burden is, therefore, upon Appellant to come forward with evidence and/or arguments which persuasively rebut the Examiner’s prima facie case. Only those arguments actually made by Appellant have been considered in this decision. Arguments which Appellant could have made but chose not to make in the Briefs have not been considered and are deemed to be waived [see 37 C.F.R. § 41.37(c)(1)(vii)].

Appellant’s arguments in response assert that the Examiner has not shown how each of the claimed features is present in the disclosure of Mattson, Jr. so as to establish a prima facie case of anticipation. Appellant’s arguments (Br. 10; Reply Br. 1-2) focus on the contention that, in contrast to

the language of claim 25 which requires two instruction storage devices, i.e., a memory device and a cache, Mattson, Jr. merely describes the storage of instructions in different pages of the same physical memory.

It is our view, however, that Appellant's arguments are not commensurate with the scope of the claims. As pointed out by the Examiner (Answer 22), there is no language in claim 25 which requires that the program code containing memory device and the cache be physically distinct. Conversely, we would add, there is nothing in claim 25 which precludes the cache from being an area, or section, or page (as in Mattson, Jr.), of program code memory. In a similar vein, Appellant's attempt (Br. 10) to distinguish claim 25 over Mattson, Jr. by asserting that Mattson, Jr. is concerned with branch instructions is unpersuasive since there are no claim recitations which limit the program code instructions to any particular type, or conversely, preclude the directed instructions from being branch instructions as in Mattson, Jr. It is our opinion that Appellant's arguments improperly attempt to narrow the scope of the claim by implicitly adding disclosed limitations which have no basis in the claim. *See In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997).

We further find to be without merit Appellant's attack (Br. 8-9) on the Examiner's use of the Holler patent in connection with the Mattson, Jr. reference as being an improper combination of references in an anticipation rejection. As quite simply pointed out by the Examiner (Answer 24), there is no intention or any need to provide any type of obviousness combination of Holler with Mattson, Jr. since the disclosure of Holler is part and parcel of the disclosure of Mattson, Jr. as it is incorporated by reference therein.

Appellant has further expanded his remarks on the alleged deficiency of Mattson, Jr., in describing the claimed memory device and cache structure at pages 1 and 2 of the Reply Brief. We find these remarks to be unpersuasive at the very least because, in our view, they misinterpret the Examiner's stated interpretation of the disclosure of Mattson, Jr. We do not find, as contended by Appellant, that the Examiner is interpreting the static cache of Mattson, Jr. as corresponding to the claimed program code memory device and Mattson, Jr.'s dynamic cache as corresponding to the claimed cache. Rather, it is apparent to us that the Examiner is interpreting the static and dynamic caches of Mattson, Jr. as pages or portions of the physical memory device (as evidenced by the Holler disclosure incorporated by reference into Mattson, Jr.) which stores the program code.

In view of the above discussion, since all of the claimed limitations are present in the disclosure of Mattson, Jr., the Examiner's 35 U.S.C. § 102(e) rejection of claim 25, as well as dependent claims 26, 27, 29, 32, and 33 not separately argued by Appellant, is sustained.

Turning to a consideration of the Examiner's 35 U.S.C. § 102(e) rejection of independent claims 34 and 48, and dependent claims 35, 36, 38-40, 46, 47, 49, 50, 52-54, 60, and 61 not separately argued by Appellant, based on Mattson, Jr., we sustain the rejection of these claims as well. We find no persuasive arguments from Appellant which convinces us of any error in the Examiner's interpretation of the disclosure of Mattson, Jr. (e.g., col. 9, ll. 23-46) which, in our view, supports the Examiner's conclusion that the determination of an instruction as "strong" or "weak" with the attendant setting of a static or dynamic flag corresponds to the claimed marking of portions of information.

35 U.S.C. § 103(a) REJECTIONS

Appellant's arguments (Br. 15-19) in response to the Examiner's obviousness rejection of independent claim 1 based on the combination of Mattson, Jr. and Morrison assert a failure by the Examiner to establish a *prima facie* case of obviousness since all of the claimed limitations are not taught or suggested by the applied Mattson, Jr. and Morrison references. Initially, Appellant reiterates (Br. 17) the arguments that Mattson, Jr. does not disclose physically separate program memory and cache memory structures and makes branch prediction determinations rather than cacheability determinations, which arguments we found to be unpersuasive as discussed *supra*.

Further, to whatever extent Appellant is suggesting (Brief 18-19) that the Examiner's proposed combination of Mattson, Jr. and Morrison must fail since Morrison does not provide a disclosure of the determination of the cacheability of instructions at compilation, we find such contention to be without merit since the Examiner has relied upon Mattson, Jr. for this teaching. It is apparent from the Examiner's line of reasoning in the Answer that the basis for the obviousness rejection is the combination of Mattson, Jr. and Morrison. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881(CCPA 1981); *In re Merck & Co., Inc.*, 800 F.2d 1091, 1096, 231 USPQ 375, 380 (Fed. Cir. 1986).

We further find, Appellant's arguments (Br. 19-20, Reply Br. 3) to the contrary notwithstanding, no error in the Examiner's establishment (Answer 9) of proper motivation for the combination of Mattson, Jr. and Morrison.



We agree with the Examiner that, since the transfer of information to an area or page of memory designated as a cache in Mattson, Jr. would require an information transfer mechanism, the ordinarily skilled artisan would have recognized and appreciated that the inclusion of a bus interface unit such as taught by Morrison to direct instructions to cache would serve as an obvious enhancement to the system of Mattson, Jr.

We also find to be without merit Appellant's contention (Reply Br. 2) that for Mattson, Jr. to satisfy the claim 1 requirement of directing selected portions of information stored in main memory to a cache under the Examiner's interpretation of the structure of Mattson, Jr., information would have to be transferred from Mattson, Jr.'s static cache to dynamic cache, an operation which does not take place in Mattson, Jr. As discussed previously, however, we do not find that the Examiner is interpreting the static and dynamic cache pages of Mattson, Jr. as corresponding, respectively, to the claimed main memory and cache. Rather, the static and dynamic caches of Mattson, Jr. are the areas or pages of main memory to which selected information is transferred from portions of main memory as claimed.

For the above reasons, since it is our opinion that the Examiner's prima facie case of obviousness has not been overcome by any convincing arguments from Appellant, the Examiner's 35 U.S.C. § 103(a) rejection of independent claim 1, as well as dependent claims 2-4, 6-8, 13-15, and 17-24 not separately argued by Appellant, based on the combination of Mattson, Jr. and Morrison, is sustained.

We also sustain the Examiner's obviousness rejections of dependent claims 5, 9-12, 16, 28, 30, 31, 37, 41-45, 51, and 55-59, in which the Mattson, Jr. and Morrison has been applied in varying further combinations

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with the references to Prasanna and Lasserre. Appellant has provided no separate arguments relative to the patentability of these claims but, rather, has chosen to let these claims stand or fall with their parent independent claims 1, 25, and 34.

### CONCLUSION

In summary, we have sustained the Examiner's rejections of all the claims on appeal. Therefore, the decision of the Examiner rejecting claims 1-61 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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